

CLAIMS

What is claimed is:

1. An objective lens driving apparatus used with an optical pickup, comprising:
a base;
a holder provided on the base;
a blade on which an objective lens is mounted;
an elastic support body elastically supporting the blade so as to be moveable with respect to the holder;
a pair of magnetic members installed on the base to face each other; and
a coil assembly including at least one focus coil, at least one tracking coil, and a tilt coil and installed at the blade so as to be disposed between the magnetic members.
2. The apparatus as claimed in claim 1, wherein, in the coil assembly, the tilt coil and the at least one focus coil are respectively placed in the upper and lower portions of the coil assembly and the at least one tracking coil is attached to at least one side surface of the tilt and focus coils.
3. The apparatus as claimed in claim 1, further comprising:
a pair of outer yokes provided on the base to fixedly support the magnetic members; and
a top cover including an inner yoke fixed to the base by penetrating a center of the coil assembly and a top yoke contacting top ends of the outer yokes from the coil assembly.
4. The apparatus as claimed in claim 1, further comprising:
a top cover coupled to the base and including a top yoke disposed above the coil assembly and a pair of outer yokes provided such that the magnetic members are fixed to both

end sides of the top yoke; and

an inner yoke provided on the base to penetrate the center of the coil assembly.

5. The apparatus as claimed in claim 1, further comprising:

a first partial outer yoke provided on the base by which part of the magnetic members are fixedly supported; and

a top cover coupled to the base and including an inner yoke fixed to the base by penetrating a center of the coil assembly, a top yoke disposed above the coil assembly, and a second partial outer yoke extending from the top yoke and coupled to the first partial outer yoke, forming an entire outer yoke by which the magnetic members are fixedly supported.

6. The apparatus as claimed in claim 1, wherein the coil assembly is installed at the center of gravity of the blade.

7. The apparatus as claimed in claim 1, wherein the base comprises a pair of outer yokes which extend from the base and fixedly support the pair of magnetic members, a pair of inner yokes which extend from the base and penetrate a center of the coil assembly, and a connection yoke which connects the outer yokes to lower portions of the inner yokes.

8. The apparatus as claimed in claim 7, wherein the outer yokes, the inner yokes, the connection yoke, and the base are formed into a single body.

9. An objective lens driving apparatus used with an optical pickup, comprising:

a holder;

a blade on which an objective lens is mounted and which is supported to elastically move with respect to the holder;

a pair of magnetic members positioned through a center of the blade to face each other;

and

a coil assembly including at least one focus coil, at least one tracking coil, and a tilt coil being entirely disposed between the magnetic members.

10. The objective lens driving apparatus of claim 9, wherein each of the pair of magnetic members is polarized into two poles.

11. The objective lens driving apparatus of claim 9, wherein the at least one tracking coil comprises first and second tracking coils, and the at least one tilt coil and the focus coil are vertically disposed with respect to each other and the first and second tracking coils are attached to opposite side surfaces of the tilt coil and the at least focus coil to face respective magnets.

12. The apparatus as claimed in claim 9, further comprising:
a top cover including a top yoke disposed above the coil assembly and a pair of outer yokes provided such that the magnetic members are fixed to both end sides of the top yoke;
and
an inner yoke to penetrate the center of the coil assembly to concentrate the lines of magnetic force toward the coil assembly.

13. The apparatus as claimed in claim 9, wherein the at least one focus coil comprises focus coils, the tilt coil separates the focus coils, and the at least one tracking coil comprises first and second tracking coils respectively attached on both sides of the focus coils and the tilt coil.

14. The apparatus as claimed in claim 9, wherein the at least one focus coil is disposed on one of an upper or a lower side of the tilt coil, and the at least one tracking coil

comprises first and second tracking coils respectively attached on both sides thereof.

15. The objective lens driving apparatus of claim 10, wherein the same poles of the magnets face each other.

16. The objective lens driving apparatus of claim 15, wherein the tilt coil is perpendicular to the magnetic members, the at least one focus coil comprises first and second focus coils disposed on a first side of the tilt coil and between respective poles of the magnetic members, and the at least one tracking coil comprises first and second tracking coils parallel to the magnetic members and disposed on opposite sides of the tilt and first and second tracking coils.

17. The objective lens driving apparatus of claim 15, wherein the at least one focus coil further comprises third and fourth focus coils disposed on a second side of the tilt coil opposite the first side and between respective poles of the magnetic members, and the at least first and second tracking coils parallel to the magnetic members and disposed on opposite sides of the third and fourth tracking coils.

18. The apparatus as claimed in claim 16, further comprising:

a top cover including a top yoke disposed above the coil assembly and a pair of outer yokes provided such that the magnetic members are fixed to both end sides of the top yoke;
and

an inner yoke to penetrate the center of the coil assembly to concentrate the lines of magnetic force toward the coil assembly.

19. The apparatus as claimed in claim 17, further comprising:

a top cover including a top yoke disposed above the coil assembly and a pair of outer yokes provided such that the magnetic members are fixed to both end sides of the top yoke;
and

an inner yoke to penetrate the center of the coil assembly to concentrate the lines of magnetic force toward the coil assembly.

20. An objective lens driving apparatus used with a pickup assembly, comprising:

a holder;

a movable blade;

a pair of magnets positioned through a center of the blade; and

a coil assembly including at least one focus coil, at least one tracking coil and a tilt coil positioned entirely between the pair of magnets.